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Amendment and Response

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST**Amendments to the Claims**

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. **(Currently Amended)** A spray device comprising:

a container;
an aqueous dental composition in the container, the composition comprising about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition, and water, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature;

a propellant, with the proviso that the propellant is not air; and

a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment, wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature.

2-3. **(Canceled)**4. **(Currently Amended)** A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water; and

a propellant, with the proviso that the propellant is not air,

wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature, and

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wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature.

5. **(Previously Presented)** The dental composition of claim 4 wherein the pre-treatment temperature is at most about room temperature.

6. **(Previously Presented)** The dental composition of claim 4 wherein the treatment temperature is about body temperature.

7. **(Previously Presented)** The dental composition of claim 4 wherein the thermally responsive viscosity modifier is a polyoxyalkylene polymer.

8. **(Previously Presented)** The dental composition of claim 4 wherein the viscosity of the composition at the treatment temperature is about 10 times to about 100 times the viscosity of the composition at the pre-treatment temperature.

9. **(Previously Presented)** The dental composition of claim 4 wherein the dental composition comprises about 17% by weight to about 40% by weight of a thermally responsive viscosity modifier.

10. **(Previously Presented)** The dental composition of claim 4 wherein the aqueous composition further comprises a salt.

11. **(Previously Presented)** The dental composition of claim 4 wherein the composition further comprises an adjuvant.

12. **(Previously Presented)** The dental composition of claim 11 wherein the adjuvant is

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selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promoters, acid neutralizers, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners.

13. (Previously Presented) The dental composition of claim 11 wherein the adjuvant is selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, enzymes, and sodium bicarbonate.

14. (Currently Amended) A spray device comprising:

a container;

an aqueous dental composition in the container, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition; an adjuvant selected from the group consisting of acids, peroxides,

fluoride sources, medicaments, stability promoters, acid neutralizers, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners; and

water; wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.

15. (Currently Amended) A spray device comprising:

a container;

an aqueous dental composition in the container, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive

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viscosity modifier based on the total weight of the composition; an adjuvant selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, glucose oxidases, and lactoperoxidases, and sodium bicarbonate; and

water; wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.

16-17. **(Canceled)**

18. **(Currently Amended)** A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water; and

an adjuvant selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promotors, ~~acid neutralizers~~, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners; and

~~—~~ a propellant, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.

19. **(Currently Amended)** A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:

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about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water; and

an adjuvant selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, glucose oxidases, and lactoperoxidases, and sodium bicarbonate; and

~~— a propellant, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.~~

20. (New) The dental composition of claim 18 further comprising a propellant.
21. (New) The dental composition of claim 20 with the proviso that the propellant is not air.
22. (New) The dental composition of claim 18 wherein the composition is in the form of a fine mist.
23. (New) The dental composition of claim 19 further comprising a propellant.
24. (New) The dental composition of claim 23 with the proviso that the propellant is not air.
25. (New) The dental composition of claim 19 wherein the composition is in the form of a fine mist.
26. (New) A spray device comprising:
 - a container;
 - an aqueous dental composition in the container, the composition comprising:

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about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition; an effective amount of an acid neutralizer active agent; and water; wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.

27. (New) The spray device of claim 26 wherein the acid neutralizer comprises baking soda.
28. (New) The spray device of claim 26 further comprising a propellant.
29. (New) The spray device of claim 28 with the proviso that the propellant is not air.
30. (New) A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:
about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;
water; and
an effective amount of an acid neutralizer active agent,
wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature.
31. (New) The dental composition of claim 30 wherein the acid neutralizer comprises baking soda.

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32. (New) The dental composition of claim 30 further comprising a propellant.
33. (New) The dental composition of claim 32 with the proviso that the propellant is not air.
34. (New) The dental composition of claim 30 wherein the composition is in the form of a fine mist.